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REPORT OF PINE BEETLE SURVEY on the KLAMATH INDIAN RESERVATION and INCLUDED PRIVATE LANDS, OREGON

Seasons of 1944 and 1945

by

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Forest Insect Laboratory
Berkeley 4, California
December 26, 1945

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FOREST INSECT SURVEYS - KLAMATH INDIAN RESERVATION AND INCLUDED PRIVATE LANDS

Seasons of 1944 and 1945

For the purpose of determining the trend of recent bark beetle infestations and to detect any sign of increasing pine beetle activity which might require control work, check plot surveys on the Klamath Indian Reservation were continued in 1944 and 1945. The 1945 survey was the 25th annual pine beetle survey of the Reservation conducted by the Bureau of Entomology and Plant Quarantine in cooperation with the Office of Indian Affairs.

The 1944 survey was conducted by R. C. Hall and C. E. Startt of the Berkeley forest insect laboratory and Don McKay during the latter part of September. The 1945 survey was conducted by F. P. Keen and C. E. Startt of the Berkeley forest insect laboratory and Mr. Lynn Hatch of the Klamath Forestry staff during the period September 24-27. In each year five half-section plots in virgin stands were cruised for current pine beetle losses. The cost of the survey was carried by the Bureau of Entomology and Plant Quarantine except for the time and expenses of Mr. Hatch which were contributed by the Indian Service.

RESULTS OF THE SURVEY.

General observations indicated that pine beetle losses on the Reservation were being maintained at a low level. This was substantiated by the plot records which showed losses running from 22 to 71 board feet per acre per year and averaging about 47 board feet per acre; or from 0.20 to 0.65 percent of the stand per year, which is less than the normal growth rate expected under virgin stand conditions.

The western pine beetle (Dendroctonus brevicomis Lec.) predominated in the infestation complex, which also included mountain pine beetle (D. monticolae Hopk.), species of Ips and flatheaded borers. In no cases were aggressive broods found, nor any grouping of more than three trees in a group. By far the larger part of the infestation consisted of single infested trees of decadent type.

Records obtained from the plot cruises are given in Table 1 for the 1943 and 1944 loss. The partial 1945 loss found during the survey indicated a slight increase, approximately 14 percent, in new loss as compared with 1944 but no increase in size of groups nor aggressiveness of broods.

TREND OF INFESTATION.

Since the previous low point in the infestation cycle reached in 1937, there has occurred an increase in infestation which peaked in 1939 and then steadily declined to a new low point in 1943. Since then a new upswing of beetle activity has occurred, but this has been of very minor

amplitude since timber stands are now growing much more thriftily than in the period 1923 to 1937 when the most severe epidemics occurred.

Since 1937 the percent of stand killed on the sample plots in virgin stands and the trend of infestation on plots with continuous records for two or more years are as follows:

Year	% of Stand Killed on Sample Plots	Trend (1937 - 100)
1937	0.50	100
1938	0.66	174
1939	0.88	231
1940	0.74	192
1941	0.36	110
1942	0.33	107
1943	0.39	106
1944	0.44	158
1945	0.58	180 (estimated)

Total Gross Loss Estimates

Estimates of total gross loss on the Klamath Indian Reservation and included private lands can only be made as very rough approximations since the amount of sampling done is insufficient for reliable estimates. On the basis of the average loss per acre found on the sample plots the loss for the Reservation as a whole is judged to be approximately as follows:

	Volume Killed in MBM		
	Klamath Indian Res.	Long Bell tract	Total
1943 Pine beetle loss	15,500	1,500	17,000
1944 Pine beetle loss	18,000	2,000	20,000

CONCLUSION

The present low status of pine beetle infestation on the Reservation does not warrant any direct control action, even though the recent survey shows a slightly increasing trend in gross annual loss. The status of present infestation is still decidedly endemic in character.

The remaining virgin ponderosa pine stands of the Reservation are for the most part of moderately high beetle hazard and can be expected to sustain rather heavy losses should conditions again become favorable for development of large beetle populations.

Continuation of selective cutting aimed at removing all merchantable "high risk" trees and those tree classes most susceptible to beetle attack will eventually put the reserve stands in a highly resistant condition. This of course will take quite a number of years at the present rate of cutting. In the meantime, if losses start to develop epidemic conditions in any part of the area, it is recommended that a light sanitation-salvage cutting in advance of the main operation be given consideration.

Table 1. Ponderosa pine killed by bark beetles on virgin check plots, Klamath Indian Reservation and included private lands, from 1943 to 1944.

Area and Plot	Check Plots: Location T.	R.	Sec.	Acres	Volume MBM		Gross Losses: No. of Trees	Volume BM	BF/Acre	Percent of Stand	Ratio to previous year
Klamath Marsh											
Little Yamsey #3	29S	11E	29N/2	320	3,790	1943	16	19,400	61	.51	.63
						1944	17	11,490	36	.30	.59
Skellock #5	30S	10E	27S/2	320	4,460	1943	13	15,830	50	.36	.97
						1944	18	21,920	69	.49	1.38
Wild Horse #7	32S	10E	10W/2	320	2,580	1943	-	-	-	-	
						1944**	1	1,310	4	.05	-
Taylor #8	33S	10E	15S/2	320	3,440	1943	12	6,930	22	.20	.60
						1944	38	21,040	66	.61	3.04
Sprague River											
Fuego #15	34S	11E	15E/2	320	3,520	1943	14	20,360	64	.58	2.35
						1944	-	-	-	-	-
Sycan Marsh											
Long Creek #29	31S	13E	33N/2	320	3,500	1943	11	9,660	30	.28	2.08
						1944	24	22,800	71	.65	2.36
Total 1943	5 plots			1600	18,710		66	72,180	45	.39	1.00*
1944	5 plots			1600	17,770		98	78,560	49	.44	1.49*

* Ratio computed from continuous record plots only.
**Record from one cruise in 1945 only.